



Complexity and origin of the smoke components as measured near the flame-front of a real forest fire incident: A case study

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Year: 2007
Journal: Journal of Analytical and Applied Pyrolysis. 78 (2): 430-437

Abstract:

A case study of a real forest fire incident is presented, where field measurements held out near the flame-front in smoky, hostile conditions. Permanent gases, such as CO, CO₂, NH₃, volatile organic compounds (VOCs) and particulate matter (PM_{2.5}, PM₁₀) were monitored. Complexity and possible origin of some of the forest fire smoke components are examined and discussed; styrene identified seems that was originated mostly from the combustion of plastics, due to the forest fire expansion to a plastics storehouse. A new approach, regarding the chemical composition of forest fire smoke and possible origin of smoke components depending on the flame-front expansion (e.g. to rural fields, rural and urban constructions or landfills), is presented in the format of a road-map. The case study tests part of the validity of the road-map, which could be used for air-quality indications and risk assessment in a forest fire. Criteria for monitoring air-quality in a forest fire, for health and safety issues, are also discussed. © 2006 Elsevier B.V. All rights reserved.

Source: <http://dx.doi.org/10.1016/j.jaap.2006.10.011>

Resource Description

Exposure :

weather or climate related pathway by which climate change affects health

Air Pollution, Extreme Weather Event, Meteorological Factors, Meteorological Factors, Temperature

Air Pollution: Particulate Matter, Other Air Pollution

Air Pollution (other): CO;NH₃;VOC

Extreme Weather Event: Wildfires

Temperature: Extreme Heat

Geographic Feature:

resource focuses on specific type of geography

None or Unspecified

Geographic Location:

resource focuses on specific location

Climate Change and Human Health Literature Portal

Non-United States

Non-United States: Europe

European Region/Country: European Country

Other European Country : Greece

Health Impact: ☒

specification of health effect or disease related to climate change exposure

Health Outcome Unspecified

Resource Type: ☒

format or standard characteristic of resource

Research Article

Timescale: ☒

time period studied

Time Scale Unspecified